UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
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CHICAGO, IL 60604-3590

June 20, 2007

REPLY TO THE ATTENTION OF:

SR-6J

Certified Mail
Return Receipt Requested

Mr. Robert W. Wilhelm II
Vice President/Senior Hydrogeologist
Haley & Aldrich, Inc.
44808 Helm Street
Plymouth, Michigan 48170

RE: U.S. EPA Comments on the Draft Remedial Investigation Report and Draft Human Health Risk Assessment - North Bronson Former Facilities Site – Former Scott Fetzer Facility OU (B5Y1-03) - Docket No. V-W-02-C-700

Dear Mr. Wilhelm:

The United States Environmental Protection Agency (U.S. EPA) and the Michigan Department of Environmental Quality (MDEQ) have reviewed the draft Remedial Investigation (RI) Report and the draft Human Health Risk Assessment (HHRA) for the Scott Fetzer Facility Operable Unit (OU) of the North Bronson Former Facilities Site. The HHRA is Appendix A of the RI Report, but was submitted and reviewed separately from the main RI Report.

RI Report Comments

In general, the RI Report was well prepared. However, the U.S. EPA has minor comments which must be addressed prior to approval. Please make the appropriate changes and provide a revised document or replacement pages/figures/tables.

1. Section 1, page 2 – ***Note regarding U.S. EPA's position concerning off-site impacts. No response or document modification required.*** The text states that off-site impacts will be addressed under the Soil Vapor Intrusion Work Plan. That is only partially correct. Off-site groundwater impacts will also need to be addressed, either through a site-wide approach coordinated with other source areas or through an expansion of the RI work under the existing AOC. The AOC addresses the extent of contamination. While a site-wide approach may make coordination with other PRPs easier, the option certainly exists under the AOC for EPA to require Scott Fetzer to investigate and evaluate the complete extent of all groundwater impacted by the facility.

2. Section 2.5, Facility Drainage, 1st Paragraph (Page 7). ***Comment highlights an issue for the FS. Modification of RI text not required.*** The 3rd and 4th sentences of this paragraph indicate that drainage at the Former Plating Area flows to the center portion of

the property through a series of pipes which discharge to an unknown point. This is a data gap that will need to be resolved during the FS to understand drainage patterns at the site, as well as contaminant fate and transport.

3. There is insufficient identification and discussion of elevated detection limits. Either insert the appropriate discussions into the identified sections, or include a new section prior to the Conclusion, to discuss these sources of uncertainties and how they will be handled. This issue was identified for the following text locations:

   - Section 6.2.1, 1st Bullet (Page 29). Soil was measured as non-detect for trichloroethene (TCE), yet the reporting limits were elevated (approximately 40 µg/kg). An explanation of the elevated reporting limits should be provided to better understand the meaning of these analytical results.

   - Section 6.4, 8th Paragraph (Page 32). This paragraph indicates that there were elevated reporting limits for vinyl chloride with a maximum reporting limit of 950 µg/kg. Many of these reporting limits are above the screening criteria, yet there is no discussion of this. This discussion would be particularly relevant for samples located outside the primary source area and where few other volatile organic compounds (VOC) were detected, such as all soil sample locations shown in green on Figures 17 and 18. An explanation for these elevated reporting limits should be provided.

4. Section 6.6.1, 3rd Paragraph (Page 36). The last sentence in this paragraph indicates that because TCE concentrations in groundwater are low at Pit #2 and Pit #8, the release from the pits was not sufficient to penetrate the vadose zone and enter groundwater. This appears to be a contradiction and needs to be resolved.

5. Section 6.7.3, 3rd Paragraph (Page 44). A stronger case needs to be made that aluminum, manganese, and iron are representative of background conditions. At a minimum, a comparison to MDEQ background values should be performed.

6. Section 8, 10th Paragraph (Page 57). The Feasibility Study should include alternatives to address groundwater contamination, at least from a source control perspective. See comment #1 above for U.S. EPA's position on how the extent of groundwater contamination may be addressed.

7. Table 2 (Page 23). Addition of a key to this table would be assist in understanding why some non-detect results are denoted as <### >and other non-detect results are "U".

8. The RI tables do not provide the reporting limits. Additionally, the RI tables indicate whether particular results are "considered" background values, yet do not include the actual background value. Revise data tables to incorporate reporting limits and background values.

9. Figures 24 - 29. The groundwater sampling points should be labeled.

10. Figures 30 and 32. These figures show some unsupported contaminant concentration contouring (i.e., contaminant contours not associated with depicted samples). In Figure 30, this occurs near the surface between VAP001 and VAP005. In Figure 32, this occurs in two areas: the first between VAP014 and VAP003 and the second between VZP141 and VAP007. Revise figures appropriately.

11. Figures 34 and 35 – Insufficient data is presented on the figures. Do any of the identified "red" locations have a concentration that also exceeds residential or industrial/commercial direct contact criteria? If so, please revise the figures in such a way as to provide the additional information. Either add additional colors to the key or provide the data on the figure to correlate with the data points.

HHRA Comments

U.S. EPA has extensive comments on the Human Health Risk Assessment (Appendix A of the RI Report). A complete resubmittal of the document will be necessary to address the following comments:

HHRA 1. The baseline HHRA should be prepared in accordance with EPA guidance. In particular, "such guidance should include, but not be limited to RAGS – Parts A, B, C, D, and E." For the most part, the draft HHRA is prepared in accordance with EPA guidance. However, the draft HHRA does not contain statistical, exposure, risk, and hazard tables in accordance with EPA's Risk Assessment Guidance for Superfund (RAGS) Part D (EPA 2001). RAGS D tables are generally a requirement for Superfund sites. However, U.S. EPA will not require these tables at this time. However, if the tables prove critical during the ROD preparation process, U.S. EPA retains the right to request that Scott Fetzer prepare the needed tables.

HHRA 2. The draft HHRA uses the most conservative of toxicity values identified from EPA's Integrated Risk Information System (IRIS) and Michigan Department of Environmental Quality (MDEQ) Part 201 criteria. U.S. EPA requires that HHRAs select toxicity values in accordance with EPA's recommended hierarchy (EPA 2003). Since the risk assessment errs on the side of conservatism, U.S. EPA will not require the revision of toxicity values; however, the Respondent may elect to make the changes as part of the document revision.

HHRA 3. The HHRA should be revised to provide clarification as to the current condition of the site and why surface soil is not addressed as part of the HHRA.

HHRA 4. The draft HHRA discusses risks and hazards almost exclusively in terms of receptor-specific total risks and hazards (see Sections 6.5, 6.6, and 6.7). For the purpose of identifying and evaluating the source(s) of the identified total

risks and hazards, the text should present and discuss the risk and hazard drivers for all receptor and exposure scenario combinations. Risk and hazard drivers can be defined as the chemicals of potential concern (COPC) and exposure pathways contributing the most to total risks and hazards. At a minimum, the text should present and discuss all COPCs and exposure pathway risks and hazards that equal or exceed 1E-06 and 1, respectively. It should be noted that based on an initial review of the draft HHRA, the primary risk drivers by exposure pathway include (1) inhalation of soil volatile organic compounds (VOC) (such as trichloroethene); (2) inhalation of soil particulates containing cadmium and manganese; (3) inhalation of groundwater VOCs (such as trichloroethene and vinyl chloride); and (4) ingestion of soil containing cadmium. The text should be revised to present and discuss all total risks and hazards that equal or exceed 1E-06 and 1, respectively, in terms of COPCs and risk drivers.

HHRA 5. EPA's ProUCL has been recently updated. Version 4.0 is currently undergoing beta testing. This most recent version is consistent with the latest EPA statistical guidance. In particular, EPA's ProUCL Version 4.0 incorporates up-to-date methods for addressing data sets containing significant percentages of censored results (EPA 2006). The draft HHRA should be revised to use EPA's ProUCL Version 4.0 if a copy can be obtained or to incorporate the principles presented in EPA (2006). If this is not practical, the draft HHRA should be revised to discuss the uncertainties associated with calculating exposure point concentrations (EPC) using older EPA methods that do not adequately address data sets with high frequencies of censored results. Any future risk assessment-related work and calculations should be conducted in accordance with the statistical principles presented in the 2006 guidance.

HHRA 6. It appears the authors are using an approach to define maximum site-specific soil background (SS BG) concentrations that assumes the true, but unknown, background distributions for individual metals can be "extracted" from data sets that contain both background and non-background (site-related) concentrations. Unfortunately, specific details of the analytical methods used to define background thresholds or cutoff points in these combined data sets are not provided in the appendix. The authors state this analysis is based on identifying a "point of departure" between the background and non-background portions of the distributions shown in a series of normal probability plots; however, no explicit definitions or decision rules are provided for objectively evaluating where these cutoff points are located. Moreover, it appears that these decisions were based largely on professional judgment, and that information contained in the probability plots was interpreted on a metal-by-metal basis, resulting in inconsistent and arbitrary definitions for background concentrations. Probability-plot partitioning approaches typically rely on multiple characteristics or properties of the data to infer that multiple populations (such as background plus contamination or

site-related concentrations) are present. Both inflection points (that is, points of departure from the linear relationship shown for plots of the observed data versus their expected normal quantiles) and break points (that is, noticeable gaps in the continuous distribution of concentrations that separate the data into groups with discrete concentration ranges) are useful diagnostics for identifying multiple populations. It appears that results indicated metals were within the background range if no major departures were seen in the linear plots of the data in original or log units versus their expected normal quantiles.

If both inflection and break points (with some basic definitions for how these will be objectively evaluated) are used to identify the point of departure in the individual probability plots, then it is likely the SS BG concentrations would be lower than those currently estimated for a number of metals. For example, independent examination of the probability plots in Attachment A indicates that SS BGs were potentially overestimated for the following metals: aluminum, antimony, arsenic, beryllium, cobalt, copper, lead, mercury, nickel, silver, thallium, and vanadium. Specifically, SS BG values generated for arsenic, cobalt, copper, lead, mercury, and nickel appear to have been overestimated. Also, while no SS BG concentrations were estimated for aluminum, antimony, beryllium, silver, thallium and vanadium, it appears that it was assumed that the entire distribution for each of these metals is within the background range. In effect, this is simply another way of overestimating SS BGs for these chemicals.

Lastly, it should be noted that, at best, the use of probability-plot partitioning approaches relies heavily on professional judgment and simplifying assumptions, and provides no guarantee that correct decisions are made with respect to the true, but unknown, background distributions. For this reason, conservative decision rules should be applied when attempting to identify points of departure between the background and non-background portions of distributions, and that care should be taken to use other lines of evidence, as appropriate, to corroborate the conclusions from this type of background analysis. The draft HHRA should be revised accordingly.

HHRA 7. The draft HHRA does not specify whether the former industrial sewer contains any liquids. The draft HHRA should be revised to address this point. If the former industrial sewer contains liquids, the draft HHRA should be revised to evaluate potential exposure through incidental ingestion, dermal contact, and inhalation of COPCs in liquids in the former industrial sewer.

HHRA 8. The draft HHRA evaluates potential recreational exposure using residential assumptions. The text should be revised to clarify this point and to discuss (1) that this approach is conservative and (2) that a recreational scenario (for example, a park) is not considered in the draft HHRA.

HHRA 9. The draft HHRA calculates dermal exposure to groundwater using chemical-specific permeability constants as shown in EPA's RAGS Part A (EPA 1989). However, EPA has updated their recommended procedures for calculating dermal exposure to groundwater (EPA 2004). Specifically, EPA recommends calculating dermal exposure to organic chemicals in water using the parameter "absorbed dose per event" (DAevent). U.S. EPA is not requiring the approach be updated at this time because it is unlikely to significantly change the dermal exposure results. However, any future risk assessment-related work and calculations should be conducted using the updated procedures found in RAGS Part E.

HHRA 10. EPA's RAGS recommends quantifying risks greater than 1E-02 using the following equation: Risk = 1-exp(-CDI × SF) (see Section 8.2.1 in EPA 1989). The risks for future on-site residents through inhalation of indoor air calculated in the draft HHRA are greater than 1E-02. U.S. EPA is not requiring the approach be updated at this time because it is unlikely to significantly change the numerical results. It is already clear that unacceptable risks are associated with potential groundwater exposure. However, any future risk assessment-related work and calculations should be conducted using the updated procedures for calculating risk levels above 1E-02.

HHRA 11. In the Attachment E table titled, "Exposure and Intake Assumptions: Dermal Contact with Groundwater for the Onsite Construction Worker, RME Groundwater Concentrations Sitewide Exposure," the cancer intake values should be approximately twice the values shown in the column labeled "Lifetime Average Daily Intake" according to a typical use of the parameter values presented in this table. Verification of the intake values was complicated because the formulae at the bottom of the table do not match the parameter values presented in the table. (Note: this problem of the formulae not matching parameter values was noted in several tables [such as in Attachment E, in the table titled "Exposure and Intake Assumptions: Inhalation of Airborne Volatiles for the Onsite Construction Worker, Reasonable Maximum Exposure Groundwater Concentrations Sitewide Exposure]). The intake and risk calculations and formulae in Attachments E, F, and G should be reviewed and corrected as necessary.

HHRA 12. The draft HHRA does not include or reference figures showing the locations of medium-specific samples used to calculate EPCs. The draft HHRA should be revised to add figures showing sampling locations or provide references to specific RI Report figures showing medium-specific sampling locations.

HHRA 13. A variety of editorial problems were identified during the review involving referencing, duplicate tables, and acronyms and abbreviations. Each of these problems is summarized below with examples. It should be understood that the examples are not intended to be comprehensive, but only illustrative.

HHRA 14. Referencing – several references cited in the text are not included in the list of references. Examples include Michigan Department of Environmental Quality (MDEQ) 2000a on page 6 and Haley & Aldrich 2007 on page 12. Also, several references were incorrectly cited. Examples include EPA 2004 on page 6—the correct citation should be EPA 2004c—and EPA 2002 on page 6—the correct citation should be EPA 2002b. All reference citations should be reviewed and the necessary corrections made.

HHRA 15. Duplicate tables – Table VII is included twice; one copy should be removed.

HHRA 16. Acronyms and abbreviations list – The draft HHRA does not include a list of acronyms and abbreviations. The draft HHRA should be revised to include such a list or the acronyms and abbreviations list in the RI Report should be expanded to include any missing elements.

HHRA 17. **Section 2.1, Page 4, Paragraph 3.** This section states that "organic chemicals that were reported above laboratory detection limits in one or more onsite soil samples obtained within the upper 12 feet of soil were identified as [chemicals of potential concern] COPC." This approach is acceptable if the laboratory detection limits are sufficiently low to detect concentrations of potential concern. The draft HHRA should be revised to discuss uncertainties associated with any contaminants where the detection limits were insufficiently low enough to detect contaminants of potential concern.

HHRA 18. **Section 2.2, Page 5, Paragraph 0.** This section discusses the selection of inorganic COPCs. The text states that "the identified points-of-departure (site-specific maximum background metals concentrations) are listed in Table IV, along with MDEQ Part 201 background concentrations." This statement appears to be incorrect. Table IV contains two columns with numerical values. The first column is titled "Background Concentration in Michigan." This column represents the MDEQ Part 201 background concentrations. The second column is titled "Maximum Detected Concentration in Onsite Soil Samples Maximum." The values presented in this column appear to represent the maximum detected concentration of each inorganic chemical detected in on-site soil and not the "site-specific maximum background metals concentrations." The text and Table IV should be revised accordingly to eliminate this apparent inconsistency.

HHRA 19. **Section 4.1.3, Page 10, Paragraph 0.** This section discusses the potential routes of exposure by which a receptor could be exposed at the site. Under the header of "Ingestion of Groundwater and Surface Water," the text indicates that receptors "may potentially drink and/or use groundwater for other residential purposes (e.g., showering and dish washing)." The text concludes that "these other pathways are considered to be insignificant in comparison with drinking water ingestion." As a result, risks associated with

these other pathways were not quantified in the draft HHRA. Because groundwater at the site contains numerous VOCs as COPCs, receptors may experience significant exposure through inhalation of VOCs released into indoor air from "other residential purposes." U.S. EPA is not requiring that the other groundwater exposure pathways be calculated at this time. However, U.S. EPA may ultimately request this information if the additional calculations are found to be necessary during the preparation of the Record of Decision.

HHRA 20. **Section 4.1.3, Page 10 and 4.1.4, Page 12**. The text discusses potential exposure through dermal contact with sediment in the former industrial sewer. Receptors exposed to sediments through dermal contact also may be exposed through incidental ingestion. The draft HHRA should be revised to quantitatively evaluate potential exposure through incidental ingestion of sediment in the former industrial sewer. Finally, the draft HHRA does not state whether liquid is present in the former industrial sewer. The draft HHRA should clearly state whether liquid is or could be present in the former industrial sewer. If liquid is potentially present, the draft HHRA should be revised to evaluate (quantitatively if possible) potential exposure through dermal contact with and inhalation of COPCs in liquid in the former industrial sewer. The draft HHRA should also explain why ingestion of liquid in the former industrial sewer is not addressed.

HHRA 21. **Section 4.1.4, Page 11, Paragraph 5.** The draft HHRA apparently evaluated an on-site office worker as representative of a light commercial/industrial land use. The draft HHRA states that an on-site office worker "will not have direct contact with soil within . . . landscaped areas." Therefore, the on-site office worker was evaluated only for potential exposure through inhalation of indoor air. This approach is not health protective for several reasons. First, under a future light commercial/industrial scenario workers could spend a portion (sometimes significant) of their work time outdoors (for example, loading, unloading, and stacking materials in a potential unpaved area). Even office workers may be exposed in landscaped areas if these areas are used for recreational purposes (for example, outdoor lunch areas, walking trails, and so forth). Therefore, the draft HHRA should be revised to quantitatively evaluate potential direct contact (incidental ingestion and dermal contact) and indirect contact (inhalation of volatiles and particulates) for a light commercial/industrial worker, rather than (or in addition to) an office worker.

HHRA 22. **Section 4.1.4, Page 12, Paragraph 1.** This paragraph discusses potential exposure for off-site office workers and residents. The text acknowledges that these receptors may be exposed to VOCs and fugitive dust emanating from site soil. However, the text states that "since VOCs and fugitive dust generation prior to and after site development will be limited due to the presence of vegetative cover, exposure from inhalation of fugitive dust [and, presumably VOCs] from the subject site prior to and after site development is

considered insignificant" and was not evaluated in the draft HHRA. The draft HHRA already evaluates potential exposure through inhalation of VOCs and fugitive dust on site. The estimated on-site concentrations of VOCs and fugitive dust used in these on-site calculations should be modeled off site and used to quantitatively evaluate potential exposure through inhalation of VOCs and fugitive dust by off-site office workers and residents. It should be noted that these off-site receptors do not have to be outdoors to be exposed. VOCs and fugitive dusts may enter buildings and become subject to exposure through inhalation. (Note: this last point applies also to potential exposure to office site workers and residents during site development). Based on experience at other sites, potential off-site exposure from fugitive dust and VOC inhalation from soils is likely to be significantly lower than on-site exposures. Therefore, the additional modeling is not required at this time. However, if the information proves necessary during the ROD preparation process, U.S. EPA will request that Scott Fetzer provide the follow-up quantification of off-site exposures from fugitive dust and VOC inhalation from soils. Note that off-site vapor intrusion from contaminated groundwater is being handled separately at this time but that additional calculations may be requested from Scott Fetzer during the ROD preparation process.

HHRA 23. **Section 4.2.1, Page 13, Paragraphs 4 and 5.** This section presents an overview of the derivation of EPCs. The text indicates that where a 95 percent upper confidence limit (95% UCL) was found to be equal to or less than "the site-specific background concentration" a metal was considered "to be within the range of background levels used for the HHRA." A review of Attachments B, C, and D revealed that 95% UCL calculations are not presented for all metals detected in soil and sediment at the former Annex/CDF property, the former Plant #1 property, and the former industrial sewer. Also, as noted above, site-specific background concentrations are not clearly identified in the draft HHRA. Therefore, the draft HHRA should be revised to describe the elimination of any metal as a COPC based on comparison of 95% UCLs with site-specific background concentrations.

HHRA 24. **Section 4.2.1**. The last paragraph on page 13 discusses the fact that EPCs were calculated assuming concentrations would not change over time. As discussed in the text, in many cases this approach is conservative. However, in some cases (for example, the degradation of chlorinated organics to vinyl chloride) degradation can produce more toxic chemicals. Therefore, the text should be revised to discuss the potential for underestimating EPCs by assuming EPCs remain constant over time.

HHRA 25. **Section 4.2.2.2, Page 16, Equations 1 and 2.** These equations are used to calculate particulate emission factors (PEF), which are used to calculate fugitive dust concentrations. The definition of terms used in the equations includes respirable fraction (PM10), which is not used in either equation; therefore, PM10 should be removed from the list of parameters. Also, the

parameter "V" used in Equation 1 is not defined; the list of parameters should be revised to include "V." This is not a critical comment. Therefore, please only address if the table is being revised for another reason.

HHRA 26. **Section 4.2.2.2, Page 17, Equations 3 and 4.** Equations 3 and 4 were used to calculate chemical-specific soil saturation concentrations and subchronic volatilization factors, respectively. Two parameters (total soil porosity and soil particle density) in the list of parameters following Equation 3 are not used in Equation 3. Therefore, these two parameters should be removed from the list. Equation 4 is presented in EPA (2002) as Equation 5-14. Based on a review of Equation 5-14, Equation 4 should be revised to add the parameter "$1/F_D$" at the end of the equation. The parameter F_D should be defined as "dispersion correction factor (unitless)." EPA (2002) recommends a value of 0.185 for F_D. This is not a critical comment. Therefore, please only address if the table is being revised for another reason.

HHRA 27. **Section 4.2.2.2, Page 18, Equations 5 and 6.** Equations 5 and 6 were used to calculate volatilization factors and apparent diffusivity, respectively. In the definition of parameters used in Equation 5, the term Q/Csc should be changed to Q/Csa. Also, in Equation 6, the second use of water-filled porosity in the denominator should be changed to air-filled porosity. Also, Henry's Law Constant (H) should be removed from the list of defined parameters following Equation 6. This is not a critical comment. Therefore, please only address if the table is being revised for another reason.

HHRA 28. **Section 4.2.2.3, Page 20, Equation 8.** Equation 8 is used to estimate chemical-specific emission rates from groundwater. As presented in the definition of terms used in the equation, it was assumed that the trench or excavation was 1 meter wide by 20 meters long. No basis for these assumed dimensions is provided. In particular, the assumed length of 20 meters appears to larger than would reasonably be expected. The Virginia Department of Environmental Quality (VDEQ) has developed a methodology for estimating the concentration of VOCs in air within a construction trench (VDEQ 2005). VDEQ assumes the construction trench is 3 feet wide (approximately 1 meter) and 8 feet long (significantly shorter than 20 meters [about 66 feet]). The draft HHRA should be revised to justify the trench dimensions used to estimate chemical emissions from groundwater.

HHRA 29. **Section 4.2.3.7, Page 25, Equation 20.** Equation 20 was used to calculate receptor-specific doses associated with dermal contact with groundwater. This equation is inconsistent with EPA's RAGS Part E, which recommends calculating receptor-specific doses associated with dermal contact with groundwater based on DAevent (EPA 2004). EPA provides two equations for organic chemicals (Equations 3.2 and 3.3) and one for inorganic chemicals (Equation 3.4). The draft HHRA should be revised to calculate doses

associated with dermal contact with groundwater based on Equations 3.2, 3.3, and 3.4 from EPA's RAGS Part E (EPA 2004).

HHRA 30. **Section 5.3, Page 27, Paragraphs 2 and 3.** Section 5.3 discusses the source of the chemical-specific toxicity factors used in the draft HHRA. The text indicates that toxicity factors were selected from EPA's Integrated Risk Information System (IRIS) database and MDEQ Toxicological and Chemical-Physical Data for Part 201 Generic Cleanup Criteria and Screening Levels. From the toxicity factors selected from these two sources, the higher cancer slope factor and the lowest RfD were selected as the cancer and noncancer toxicity factors for each chemical. The sources from which toxicity factors were selected do not match EPA's recommended hierarchy (EPA 2003). (Note: EPA's IRIS database is the preferred choice of toxicity factors in this hierarchy). Chemical-specific toxicity factors should be considered under Tier 3 of EPA's recommended hierarchy. Because the authors are using a more conservative approach, U.S. EPA is not requiring that the toxicity factors be reevaluated. However, the authors may elect to make this change as part of the document revision and should make the change for future risk assessment-related work. See also comment HHRA2 above.

HHRA 31. **Section 6.2, Page 29, Paragraph 3.** Section 6.2 discusses the evaluation of noncarcinogenic health effects associated with potential exposure to lead in soil. The text presents receptor-specific thresholds of 800 milligrams per kilogram (mg/kg) (a commercial/industrial worker) and 400 mg/kg for a residential receptor. However, the source(s) or basis for these values is not presented or referenced. Section 6.2 should be revised to reference the source(s) or basis for the above-referenced receptor-specific lead thresholds.

HHRA 32. **Sections 6.5, 6.6 and 6.7** – The text should be expanded to include a very brief discussion of what contaminants/media are driving the risks for each scenario.

HHRA 33. **Table IV.** Table IV summarizes the background metals evaluation. The table indicates that no background concentration is applicable (NA) for chromium. This is not true. Table IV should be revised to indicate the statewide default background concentration for chromium (III) is 18 milligrams per kilogram (mg/kg). Table IV also should be revised to include background concentrations for iron (12 mg/kg), manganese (440 mg/kg), and total cyanide (390 mg/kg), and to present the maximum concentration detected in on-site soil for these same three metals.

HHRA 34. **Table V.** Table V presents the MDEQ Part 201 human health criteria comparison for soil at the former Annex/CDF property. The table presents a column labeled "95% UCL." However, 95% UCL values are presented for only six chemicals. The table should be revised to provide 95% UCL values for the remaining chemicals or to clearly indicate why such values are not

presented for particular chemicals. In particular, the meaning of blank cells should be explained. (Note: a similar comment also applies to Tables VII, VIII, IX, XI, XII,XIII, XIV, XVI, XVII, and XVIII).

HHRA 35. **Table XXII.** Table XXII presents receptor-specific exposure assumptions used in the draft HHRA. Comments on specific elements of this table are presented below.

On-site trespasser and on-site resident:

- A body weight of 15 kilograms (kg) is labeled as "child/teen." This is misleading; use of a body weight of 15 kg is relevant only for young children and should be labeled accordingly.

- The same exposure frequency (EF) values are applied to both on-site trespassers and on-site residents. It should be noted that the EF values used are very conservative for on-site trespassers.

- Averaging time should be defined as "Exposure duration × 365 days/year. (Note: this applies to all receptors.)

On-site utility worker in former industrial sewer easement:

- The soil adherence factor (AF) should be revised from 0.2 milligram per square centimeter (mg/cm^2) to 0.3 mg/cm^2 to reflect the potentially greater adherence of sediment (assumed to contain greater moisture than soil). The value of 0.3 mg/cm^2 is EPA's recommended value for construction workers (EPA 2002). (Note: this same comment applies to the AF value for on-site landscapers.)

- The proposed skin surface area for sediment (904 cm^2) does not appear to be health protective. It should be assumed that on-site utility workers may contact sediment in the former industrial sewer easement to the same extent as construction workers may be exposed to subsurface soil (3,300 cm^2) unless adequate justification is provided. Also, if it is assumed these workers are exposed on their hands, then potential exposure through incidental ingestion (see Specific Comment 2) should also be evaluated for these receptors.

On-site landscaper:

- The proposed exposure duration (ED) value of 7.3 years is inconsistent with EPA's recommended ED value of 25 years for industrial workers. It is not unreasonable to assume a worker could provide landscaping services for this site for the duration of his or her working career. The draft HHRA should be revised accordingly. (Note: Similarly,

the proposed ED value of 21 years for the on-site commercial office worker should be revised to 25 years.)

HHRA 36. **Table XXXV.** Table XXXV summarizes the risk characterization results for the former Annex/CDF property. This table is helpful as far as it goes. However, the table would be more informative if additional columns were added identifying the risk and hazard drivers for all risks and hazards greater than or equal to 1E-06 and 1, respectively. (Note: This same comment also applies to Tables XXXVI and XXXVII.)

Pursuant to the terms of the Administrative Order on Consent for the Former Scott Fetzer OU, please provide a revised RI Report, including a revised HHRA, within 60 days of your receipt of this letter. If you have any questions or wish to have a conference call to discuss the HHRA comments, please let me know as soon as possible.

Sincerely,

Terese A. Van Donsel
Remedial Project Manager

Attachment: SulTRAC Review References

cc: S. Jaffess, EPA-SFD
L. Johnson, EPA-ORC
D. Larsen, MDEQ
C. Graff, MDEQ
S. Giblin, Jones Day
P. Scanlon, Scott Fetzer
J. Knoepfle, Sullivan International
Site File

REFERENCES

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